the vermis alone, and of the anterior upper part of the vermis, only (Nothnagel, to the contrary) calls out disturbances of the equilibrium. B. also made experiments upon dogs, with similar results. He also saw that these disturbances were gradually compensated for, and the question arose if this compensation took place through the cerebellum, or through other paths, perhaps the cerebrum. Under this idea Prof. Munk extirpated for him, on a dog, the sensory centre of the anterior extremity; the cerebellum had been previously operated upon. The dog exhibited the same symptoms as a normal one does whose corresponding sensory centre had been extirpated. Hence, subcortical apparatuses, highly probably located in the cerebellum itself, are contrivances which learn anew to take on the function of the extirpated part. We have in the cerebellum itself, as Munk has shown in the cerebrum, the same peculiarity about the substitution of function.—*Journal of Nervous and Mental Disease*, April, 1882.

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The Regulating Respiratory Nervous Apparatus.

Dr. J. C. GRAHAM (*Arch. f. d. ges. Phys.*, Bd. xxv. H. 7 and 8) has discovered a new regulating nervous system of the respiratory centre. If, in a rabbit, after opening the abdomen (the thorax unopened), as long a piece as possible of the splanchnic is prepared (which is easiest on the left side), a section is made of it, and the central end is laid upon electrodes, then the breathing is arrested in a state of expiration, the diaphragm is in a state like in an extreme expiratory act, and the expiratory muscles of the abdomen in the state of strongest contraction. This experiment succeeds when the two vagi and sympathetics in the neck are divided. This experiment is said to be very suitable for a demonstration at a lecture, as it never fails. After section of the medulla oblongata in its most anterior part, so that connection with the brain is cut off, still the experiment succeeds. After section of the spinal cord between the 11th and 12th dorsal vertebræ the experiment still succeeds. After section of the spinal cord between the 4th and 5th dorsal vertebræ then the experiment fails. These facts prove that the fibres run in the sympathetic and thus enter the spinal cord, and then ascend to the medulla oblongata. This irritation of the splanchnic succeeds when the animal is in a state of dyspnœa or apnœa.—*Journal of Nervous and Mental Disease*, April, 1882.

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The Physiology of the Cervical Sympathetic.

MM. DASTRE and MORAT, after having recognized the existence in the cervical trunk of the sympathetic nerve of vaso-dilator fibres for the bucco-facial region, made a number of experiments to determine the physiology of these nerves, and have just announced their results at a meeting of the Académie des Sciences.

1. Excitation of the posterior segment of the spinal cord, after its section in the cervical region, causes a dilatation of the vessels of the auricular and bucco-facial regions, and of the buccal mucous membrane in the cat, rabbit, dog, and goat.

2. The excitation of the peripheral ends of the anterior roots of the second, third, fourth, and fifth cervical nerves causes a dilatation of the vessels in the corresponding bucco-facial region.

3. If, after the section of the communicating branches between the spinal nerves and the sympathetic, the end which passes to the head is stimulated, the same dilatation is produced. The vaso-dilator nerves, therefore, pass through the sympathetic.

4. Stimulation of the two branches of the annulus of Vieussens produces the same results.

5. And stimulation also of all parts of the cervical sympathetic where it unites with the cranial nerves, especially with the trigeminal.

6. The comparison of the results obtained by stimulation of the sympathetic and of the trigeminal show that the latter nerve receives the greater part of its dilator fibres from the sympathetic.

These nerves may be stimulated by other means more physiological than electricity.

7. The blood in asphyxia stimulates both classes of vaso-motor nerves to activity; but the congestion, the index of the vaso-motor reaction, of the bucco-facial region is less marked on the side on which the sympathetic track has been divided.

These nerves may be stimulated either directly or, as is most usual, reflexly by an irritation coming from the periphery.

The following experiments show the regions in which these different nerves arise:—

1. Stimulation of the vagus nerve in the inferior cervical region produces a bilateral dilatation.

2. The vaso-dilatation ceases or diminishes considerably on the side on which the sympathetic is divided.

3. Vaso-dilatation does not appear on both sides if the animal is deeply chloroformed, or if the cervical spinal cord has been divided at any point.

4. The vaso-dilatation is very marked when the superior laryngeal nerve or the vagus is excited at the origin of its pulmonary branches. When points lower than these are excited no dilatation follows, even if the cardiac nerves are stimulated.

Hence the visceral sensitive nerves which govern this reflex come from the organs of respiration.

5. Excitation of the central end of the sciatic nerve also produces this congestion; stimulation of the tibial nerve, and probably of all the cutaneous nerves, has the same result.

6. After section of the cervical sympathetic trunk, reflex or asphyctic stimulation of this centre can still produce a certain degree of dilatation. When the section has been made sufficiently long to allow of the degeneration of its fibres, stimulation of the superior maxillary nerve can still produce a slight dilatation of the vessel in the lip of the same side. Hence, all the vaso-dilators of this region are not contained in the cervical sympathetic.—*Rev. Scientifique*, Aug. 5, 1882.

Normal and Pathological Sleep.

Emile Lung gives the following *résumé* of the propositions established in an elaborate memoir of the above subject.

1. We are only conscious of the phenomena of the exterior world in which we live by the intermediation of our organs of sense which receive and transmit impressions to our consciences, of which the seat is in the brain, the organ of our physical life.

2. In addition to the phenomena of consciousness all sensations are reducible to vibratory movements, which are transmitted one after the other through the nerves to the nerve centres in the brain and spinal cord.

3. The sensitive impressions which are transmitted to the spinal cord are not appreciated by our consciences; they are capable of producing movement in different parts of our bodies, but these movements are effected unconsciously without any effort of will. In physiology they are termed reflex movements.

4. Just as a real sensation can exist without affecting our consciousness, so in certain cases we can be conscious of sensations which have no external reality.